

What is claimed is:

- 1 1. A system for providing an e-learning course, comprising:
2 a database for storing a plurality of reusable learning objects and a profile of at least one
3 student that defines a plurality of course requirements of the student; and
4 a dynamic rendering engine responsive to the student profile and operable to assemble a
5 subset of the learning objects on-the-fly for delivery to the student.
- 1 2. The system of claim 1, wherein each of the learning objects represents a discrete element
2 of the subject matter or presentation of the e-learning course.
- 1 3. The system of claim 1, wherein the profile includes a technological capability of a
2 computer system being utilized by the student.
- 1 4. The system of claim 3, wherein the technological capability is bandwidth available to the
2 student for receiving the e-learning course.
- 1 5. The system of claim 1, wherein the profile includes a course preference of the student.
- 1 6. The system of claim 5, wherein the course preference includes a language preference of
2 the student in receiving the e-learning course.
- 1 7. The system of claim 1, wherein the profile includes information as to learning objectives
2 with which the student is familiar, whereby the dynamic rendering engine assembles the e-
3 learning course without learning objects that contain the familiar learning objectives.
- 1 8. The system of claim 7, wherein at least one of the learning objects includes an assessment
2 item for determining the learning objects containing familiar learning objectives.

3 a dynamic delivery tool operable to dynamically assemble and deliver a course page of
4 instruction embodying at least one learning object to a student in response to a request by the
5 student; and

6 a learning management system containing a student profile of the student;

7 wherein the dynamic delivery tool determines the at least one learning object based upon
8 the student profile.

1 18. The e-learning tool of claim 17, wherein the authoring tool includes a template-based
2 content editor for creating the plurality of learning objects.

1 19. The e-learning tool of claim 17, wherein each learning object is categorized in one of a
2 plurality of hierarchical classes, and further wherein each of the learning objects within a first
3 class of the plurality of hierarchical classes contain a learning objective, an assessment item and
4 a subsection of course content.

1 20. The e-learning tool of claim 19, wherein the dynamic delivery tool determines the at least
2 one learning object based upon whether an administration of the assessment item determines
3 whether the student is familiar with a learning objective corresponding to the learning object.

1 21. The e-learning tool of claim 20, wherein the student profile contains a language
2 preference of the student for delivery of the course page of instruction.

1 22. The e-learning tool of claim 21, wherein the student profile includes a technical
2 capability of a computer system used by the student to receive the course page of instruction.

1 23. The e-learning tool of claim 22, wherein the technical capability is an amount of
2 available bandwidth.

1 24. The e-learning tool of claim 17, wherein the learning management system presents course
2 information to the student in a form of a campus that summarizes which of a plurality of courses
3 are available to the student and which of the available courses the student has already taken.

8 a third software application that correlates the received information with the classes of
9 discrete elements so as to automatically and dynamically assemble and render the discrete
10 elements as an e-learning course customized to the individual requirements of the student.

1 33. The system of claim 32, wherein the student information identifies a language preference
2 of the student, a technological capability of a computer system used by the student to access the
3 e-learning content, and information as to e-learning content with which the student is familiar.

1 34. The system of claim 32, wherein the discrete elements are created and classified
2 according to a plurality of business requirements for delivery of the e-learning content.

1 35. The system of claim 34, wherein the discrete elements are used in creating a Uniform
2 Modeling Language (UML) diagram for modeling the software applications.

1 36. The system of claim 35, wherein the software applications are based on the UML
2 diagram and written in Java.

1 37. A method for dynamically delivering a page of e-learning course content to a user,
2 comprising:

3 storing a plurality of discrete learning objects within a database; and
4 assembling and delivering the page including at least one of the learning objects in
5 response to an input from the user in approximately real-time to the user, based upon individual
6 delivery parameters of the user.

1 38. The method of claim 37, wherein each of the learning objects pertains to presentation,
2 content or delivery of the e-learning course.

1 39. The method of claim 37, further comprising:
2 creating the learning objects by utilizing a template-based authoring tool.

FOIA b 5, DPP

1 40. The method of claim 37, wherein said assembling and delivering the at least one of the
2 learning objects in response to an input from the user in approximately real-time to the user,
3 based upon individual delivery parameters of the user, further comprises:
4 comparing semantic elements of a subset of the learning objects with semantic elements
5 of a plurality of profile objects that profile the individual delivery parameters of the user.

1 41. The method of claim 37, wherein the individual delivery parameters of the user include a
2 language preference of the user, a technological capability of a computer system used by the user
3 to access the e-learning content, and information as to e-learning content with which the student
4 is familiar.

1 42. The method of claim 37, further comprising:
2 testing the user's knowledge of the e-learning content prior to assembly and delivery, to
3 thereby assist in determining the at least one of the learning objects.

1 43. An article of manufacture, which comprises a computer readable medium having stored
2 thereon instructions for carrying out a method for delivering e-learning content, the method
3 comprising:
4 accumulating course content by a first code segment;
5 defining the course content in terms of discrete, reusable learning objects by a second
6 code segment;
7 determining a subset of the learning objects for distribution to a user based on
8 requirements of the user by a third code segment; and
9 dynamically delivering the subset of learning objects to the user by a fourth code
10 segment.

1 44. The article of manufacture of claim 43, wherein the requirements of the user include a
2 language preference of the user, a technological capability of a computer system used by the user
3 to access the e-learning content, and information as to e-learning content with which the student
4 is familiar.

1 45. The article of manufacture of claim 44, wherein the requirements of the user are
2 separately stored within a database, and further wherein the third code segment determines the
3 subset of learning objects by semantically matching the requirements to the subset of learning
4 objects.

1 46. The article of manufacture of claim 43, wherein the first code segment further comprises:
2 a code segment for presenting a plurality of templates to a course developer, for entering
3 the course content into the templates for accumulation.

1 47. An e-learning development and distribution tool for providing course content,
2 comprising:

3 means for accumulating and storing a plurality of discrete software entities, wherein each
4 entity embodies one aspect of presenting, accessing or explaining the course content; and

5 means for assembling and delivering at least one of the discrete entities to at least one
6 student in response to an input from the student in approximately real-time, such that the student
7 receives an individualized version of the course content.

1 48. The tool of claim 47, further comprising:

2 means for characterizing individual delivery parameters of the student, from which the

3 means for assembling and delivering determines the at least one discrete entity to deliver.